

transverse, not meeting inwardly, pronotal lateral margins only moderately angularly produced.

Long., excl. tegm., ♂, 22 mm.; exp. tegm. 68 mm.

*Hab.* Brit. East Africa; Nairobi (*C. F. Elliott*, Brit. Mus.).

Allied to *P. hecuba*, Dist., from which it differs by the very much less produced pronotal margins, the opercula not meeting internally (in *P. hecuba* they overlap), the opaque colouring of the wings is more extensive and extends to the anal area, tegmina paler, &c.

# LX.—*Four new European Squirrels.*

By GERRIT S. MILLER.

AMONG the 275 skins of European squirrels in the British Museum are representatives of the following four hitherto unnamed forms:—

## *Sciurus vulgaris rutilans*, subsp. n.

1899. *Sciurus vulgaris rufus*, Barrett-Hamilton, Proc. Zool. Soc. Lond. p. 5 (part.). Not of Kerr, 1792.

1906. *Sciurus vulgaris rufus*, Trouessart, Bull. Mus. d'Hist. Nat. Paris, xii. p. 360 (part.). Not of Kerr, 1792.

*Type*.—Adult male (skin and skull). B.M. no. 95. 4. 18. 7. Collected at Rudolstadt, Schwarzburg, Germany, December 24, 1894. (Lilford Collection.)

*Diagnosis*.—Colour much brighter than in *Sciurus vulgaris vulgaris*, the body clear rufous\* in summer, rufous tinged with light smoke-grey along sides in winter; tail at all seasons clear rufous, usually somewhat darker than body. Brown phase (occasional but much less frequent than red phase): body a grizzled hair-brown, suffused with mummy-brown over back; tail slaty black.

*Measurements*.—Type: head and body 223 mm.; tail-vertebræ 175; hind foot 62; ear from meatus 27. Skull: condylo-basal length 46.6; mastoid breadth 25; postorbital constriction 18; interorbital constriction 17; rostral breadth at front of nasals 8.6; nasal 15.4; diastema 12.2; mandible 33; maxillary tooth-row (alveoli) 9.6; mandibular tooth-row (alveoli) 9.6.

*Specimens examined*.—Fifty-five from the following

\* The exact shade in the type between the cinnamon-rufous and orange-rufous of Ridgway, but somewhat lighter than either.

localities:—*Germany*, Marxheim, Bavaria, 5; Blumenthal, Hannover, 2; Marburg, Hessen-Nassau, 2; Ilsenburg, Saxony, 7; Magdeburg, Saxony, 1; Wernegerode, Saxony, 1; Strass, near Burgheim, Schwaben, 8; Niesky, Silesia, 1; Rudolstadt, Thüringen, 4; Ummerstadt, Thüringen, 12; Neustadt, Wied, 4: *Austria-Hungary*, Haida, Bohemia, 1; Karlsbad, Bohemia, 1; Hatszeg, Hungary, 1: *Roumania*, Bustenari, 5.

*Remarks*.—This is the bright-coloured squirrel of Central Europe, ranging from Germany eastward through Austria-Hungary to Roumania. In Switzerland it apparently intergrades with *S. vulgaris italicus*, in which the brown phase is dominant, but the exact relationship between these two forms is not yet clearly understood, and for this reason I have omitted the Swiss specimens from the list of material examined. To this animal and the next the name *rufus* has been applied by Barrett-Hamilton and Trouessart, but Kerr's *Sciurus vulgaris rufus*\* is strictly a synonym of *S. vulgaris vulgaris*, and therefore cannot be used in this sense.

*Sciurus vulgaris russus*, subsp. n.

1899. *Sciurus vulgaris rufus*, Barrett-Hamilton, Proc. Zool. Soc. Lond. p. 5 (part.). Not of Kerr, 1792.

1906. *Sciurus vulgaris rufus*, Trouessart, Bull. Mus. d'Hist. Nat. Paris, xii. p. 360 (part.). Not of Kerr, 1792.

*Type*.—Adult male (skin and skull). B.M. no. 97. 11. 6. 2. Dinan, Côtes-du-Nord, France, October 29, 1897. Collected and presented by W. Jennings Bramley, Esq.

*Diagnosis*.—Similar to *Sciurus vulgaris rutilans*, but with colour in red phase darker and less bright, the body cinnamon-rufous strongly tinged with chestnut in summer, hazel† much suffused with dull light smoke-grey along sides in winter; tail at all seasons a light bright chestnut (Ridgway). Brown phase infrequent, similar to that of *rutilans*.

*Measurements*.—Type: head and body 202 mm.; tail-vertebræ 166; hind foot 54; ear from meatus 30. Skull: condylo-basal length 46; zygomatic breadth 29; mastoid breadth 24.6; postorbital constriction 16.8; interorbital constriction 15.4; rostral breadth at front of nasals 7.4; nasal 15.2; diastema 12.4; mandible 31.4; maxillary tooth-row (alveoli) 9; mandibular tooth-row (alveoli) 8.6.

\* 'Animal Kingdom,' p. 255 (1792).

† In the type the exact shade of the red is slightly paler than hazel, but the general effect produced by the light and dark annulations is intermediate between hazel and chestnut.

*Specimens examined*.—Twenty-two, from the following localities :—*Holland*, Oosterbeek, 2; Graveland, 4: *France*, Dinan, Côtes-du-Nord, 4; Duclair, Seine-Inférieure, 2; Seine-Inférieure, no exact locality, 3; Manonville, Meurthe-et-Moselle, 2; Meurthe-et-Moselle, no exact locality, 5.

*Remarks*.—While the exact limits of the range of this squirrel are still unknown, it is probable that the animal occupies the coast-region from Denmark southward at least to Brittany. In the Landes of South-western France it is apparently replaced by the North-Spanish squirrel or a closely related form. Westward it extends across France to the Valley of the Moselle.

In colour, as well as in range, *Sciurus vulgaris russus* and *S. v. rutilans* correspond with the two races of red-backed voles, *Evotomys hercynicus rubidus* and *E. h. hercynicus*, occurring in the same regions.

*Sciurus vulgaris numantius*, subsp. n.

1905. *Sciurus* sp., Cabrera, Bol. Real Soc. Españ. Hist. Nat. iv. pp. 224, 231 (April 1905).

1905. *Sciurus* *rufus*, Cabrera, Bol. Real Soc. Españ. Hist. Nat. iv. p. 225 (April 1905).

*Type*.—Adult female (skin and skull) collected by Gerrit S. Miller, at Pinares de Quintanar de la Sierra, Province of Burgos, Spain, October 28, 1906. Original number 7418.

*Diagnosis*.—Size greater than in the Central-European forms, but less than that of *Sciurus infuscatus*, Cabrera. Colour of upperparts in light phase not as dark as in *S. infuscatus*, and tail never with white median area on lower surface.

*Colour*.—*Type*: head, back, sides, and outer surface of legs a uniform indistinctly grizzled brown, intermediate between the broccoli-brown and wood-brown of Ridgway; a faint russet tinge along middle of back. Muzzle and fore part of face between ochraceous-buff and clay-colour. Cheeks drab. Ear-tufts blackish brown. Sides of neck pale dull wood-brown. Inner surface of legs and ill-defined stripe along sides of belly dull light hazel. Feet like inner side of legs, but paler. Tail a very dark rufous, approaching the chestnut of Ridgway, especially near base, but rather more red; median portion of tail below lighter, the hairs buffy grey through basal half, each with two drab annulations. Underparts buffy white, the chin and interramial region light ecru-drab.

In the dark phase the tail is clear bluish black, very faintly

grizzled along median region below, and the back is much darkened by a blackish suffusion.

Colour variation shows itself chiefly in the greater or less tendency to assume the dark phase. Occasionally the hazel of sides brightens nearly to a dull rufous and spreads to lateral portion of dorsal area, the portion bordering white of ventral surface at the same time becoming nearly buff. Ear-tufts either blackish or reddish.

*Skull and teeth.*—The skull and teeth are intermediate in size between those of the ordinary Central-European forms (*russus* and *rutilans*) and the large *S. infuscatus*. In form they show no special peculiarities.

*Measurements.*—Type: head and body 237 mm.; tail-vertebræ 230; hind foot 66; ear from meatus 34. Skull: condylo-basal length 50; zygomatic breadth 33; mastoid breadth 26; postorbital constriction 17·4; interorbital constriction 18·8; rostral breadth at front of nasals 8·2; nasals 16; diastema 13; mandible 34; maxillary tooth-row 9·8; mandibular tooth-row 10.

*Specimens examined.*—Nineteen, from the following localities:—*France*, Solférino, Landes, 1; St. Jean de Luz, Basses Pyrénées, 1; *Spain*, Sierra de Dubros, Asturias, 2; Arrechavaleta, Vitoria, 2; Panticosa, Huesca, 6; Pinares de Quintanar de la Sierra, Burgos, 7.

*Remarks.*—This squirrel is evidently the *Sciurus* sp.? of Mr. Cabrera's review of the Spanish members of the genus, as its characters agree with those assigned to this problematic form. It is also without much doubt the *rufus* of the same paper, though on this point the evidence is not so clear. Whatever the squirrel of the Lower Ebro Valley may be, it is very unlikely to prove identical with either *russus* or *rutilans*, the two forms confused under the name *rufus* at the time when Mr. Cabrera wrote.

*Sciurus vulgaris lilæus*, subsp. n.

1906. *Sciurus vulgaris italicus*, Trouessart, Bull. Mus. d'Hist. Nat. Paris, xii. p. 364 (part.).

*Type.*—Young adult female (skin and skull). B.M. no. 7.9.8.1. Agoriani, north side of Lyakura (Parnassus) Mts., Greece. Received from Wilhelm Schlüter.

*Diagnosis.*—Colour in brown phase peculiar in the noticeable contrast of the very dark almost blackish posterior half of back with hair-brown shoulders and neck. Red phase not known, and probably rare or absent.

*Colour.*—Type: general colour above a grizzled hair-

brown, paler and more grey on cheeks and across muzzle, much darkened with blackish on posterior half of back and on outer surface of hind legs. Inner surface of hind legs and line along sides of body bordering white of underparts tawny-ochraceous, becoming lighter and duller anteriorly and continued along sides of neck and spreading over outer surface of fore legs. Feet dull tawny-ochraceous suffused with blackish. Tail blackish suffused with tawny-ochraceous beneath surface. Underparts creamy white; clin and interramial region light drabby grey.

*Skull and teeth.*—The skull and teeth show no special peculiarities.

*Measurements.*—Type: hind foot 60 mm.; ear from meatus 29. Skull: zygomatic breadth 31.4; postorbital constriction 17.8; interorbital constriction 17; rostral breadth at front of nasals 7.4; nasal 14; diastema 12.8; mandible 32.4; maxillary tooth-row 9.8; mandibular tooth-row 9.8.

*Specimens examined.*—Three, all from the type locality.

LXI.—*New Species of African and Indo-Malayan Hesperiidæ.* By Colonel C. SWINHOE, M.A., F.L.S., &c.

Family Hesperiidæ.

*Casyapa kallima*, nov.

♂ ♀. Dark olive-brown; frons, palpi, body below, and legs bright orange-ochreous; antennæ with ochreous and brown bands: fore wings with a very broad and prominent orange-ochreous band from the outer margin above the hinder angle, which it does not reach, to the middle of the costa, running inwards for some distance along the costal vein, just below its middle the band is slightly contracted; cilia of both wings dark brown; no other markings above or below.

Expanse of wings, ♂  $2\frac{2}{10}$ , ♀  $2\frac{5}{10}$  inches.

Milne Bay, New Guinea (types in B. M.).

Allied to *C. callixenus*, Hew., from Dorey.

*Tagiades louisa*, nov.

♀. Blackish brown; palpi white beneath; frons with a white spot on each side: fore wings with two large hyaline spots at the end of the cell, one outside its lower angle and